



# Year 4/5 DT Knowledge Organiser: Frame Structures



## Subject Specific Skills

- Use research and develop criteria to inform the design of innovative, functional, appealing products that are fit for purpose.
- Generate, develop, model and communicate ideas through discussion, annotated sketches and prototypes.
- Investigate and analyse a range of existing products.
- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
- Accurately measure, mark out, cut and shape materials and components
- Accurately assemble, join and combine materials and components

## Prior Learning

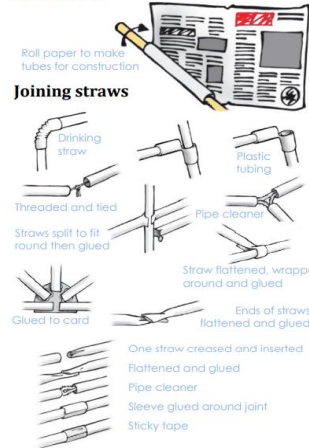
- Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials.
- Basic understanding of what structures are and how they can be made stronger, stiffer and more stable

## Key Vocabulary

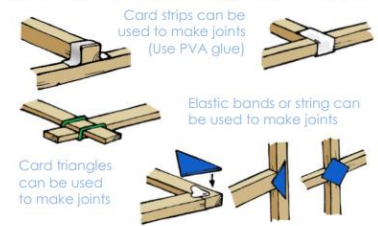
frame structure,  
stiffen,  
strengthen,  
reinforce,  
triangulation,  
stability,  
shape,  
join,  
design specification,  
prototype,  
annotated sketch,  
purpose,  
innovation,  
research,  
functional

## Technical Knowledge:

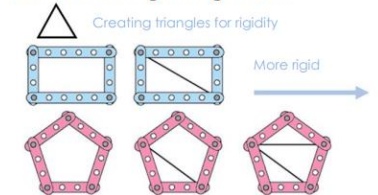
### Techniques for building frame structures



### Joining thin sectioned pieces of wood

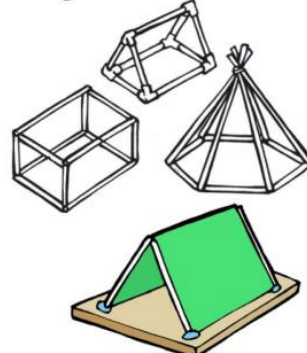


### Understanding triangulation

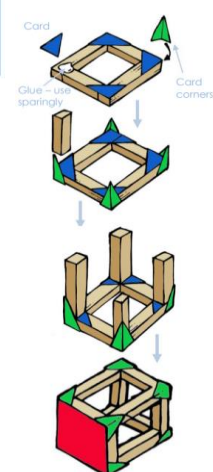


## Making small-scale frame structures

### Using straws



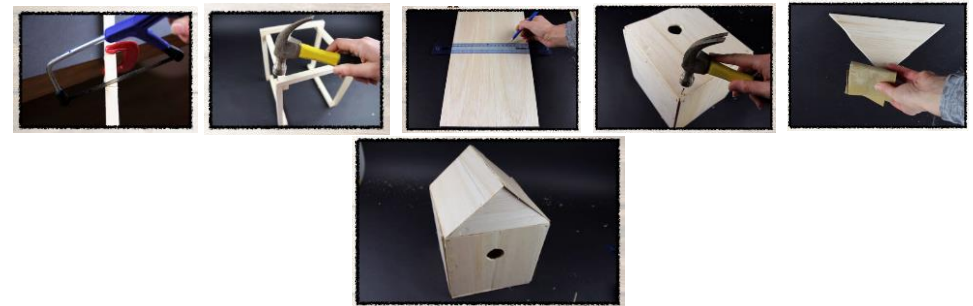
### Using square section wood



## Design:

- When designing the bird house consider:  
Who is the intended user and what is the purpose of the frame structure?  
Will it be permanent, or can it be easily dismantled? What materials will you use?  
How will it be joined? How will it be reinforced? How will it be finished?
- Model their ideas using materials such as paper, card and paper straws. Consider:
- How will you make it stable? How will it stand up? How could you make it stronger?  
Where are the weak points? How could you reinforce them? What tools and materials will you need? How can you improve the design?

## Make:



## Evaluate:

- How well have the products been designed?
- How well products have been made?
- Why have the materials been chosen?
- What methods of construction have been used?
- How well do the products work?